Art. VII.—*International Statistical Uniformity.*

By Henry D'Esterre Taylor.

[Read 8th August, 1885.]

In attempting to bring under notice some suggestions tending to promote uniformity in international statistics, a brief recapitulation of the circumstances which led to their inception may not be out of place. One of the vital questions which, under various aspects, is engaging public attention in the Australian colonies, is a consideration of the more prominent characteristics of the growing native (white) race, and the effects they are likely to produce on the future history of this portion of the British Empire. Perhaps the phase of this development which attracts most notice at present is the one locally known as "larrikinism," a term having a somewhat similar signification as "rough" has in London and "hoodlum" has in San Francisco. It includes all the lighter offences against order usually committed by young offenders up to twenty, or even five-and-twenty years of age. A local lecturer, who is credited with having had exceptional opportunities of forming a correct judgment, went so far lately as to assert that juvenile crime, or larrikinism, was more rampant in the colony of Victoria than in any other part of the world. Pressed for statistical or other reliable authorities, he was only able to fall back on "his own observation" in support of his statement. Doubting the correctness of his conclusions from the tenor of other statistics I had collected on the "Young Australian" question, I endeavoured to test them by procuring official figures showing the amount of juvenile crime existing, in proportion to their populations, in the principal English-speaking communities—Great Britain, Canada, and the United States—and comparing them with similar statistics from our own colony of Victoria. The results, after many hours of labour and research, only demonstrated the impossibility of succeeding in this task, owing to the dissimilarity existing in the statistical divisions adopted by each country (and more especially by individual departments in Great Britain,) in furnishing returns on precisely similar subjects.

No information of any practical use could be obtained, because no table could be constructed which would include similar figures from any two countries. In Victoria *prisoners* are classified (according to age,) in decennial periods, commencing at 20. Persons *arrested* are classified quinquennially from 10 years upwards. Therefore, under these heads 20 and 25 could be utilised as ages at which to institute a comparison. Out of ten criminal and prison returns (exclusive of industrial and reformatory schools,) hidden away amongst the contents of some 56 volumes of Lords' Papers, which had to be examined, only two possessed classifications at the age of 25, and three at the age of 20. For those who are fond of variety there is great amusement to be extracted from these returns—after you have managed to find them. The ages are classified in such a number of ways as to satisfy the most exacting. One English, one Irish, and two Scotch tables are subdivided as follows:—Under 12, 12 to 16, 16 to 21, 21 to 30, &c.; two as under 16, 16 to 18, 18 to 21, 21 to 50; one 15 to 20, 20 to 25, 25 to 30, &c.; one under 15, 15 to 24, 25 to 34; one under 20, 20 to 25, 25 to 30; one under 20, 20 to 30; two as under 16 and over 16; and, finally, one convict return is differently classified for each prison! In the United States they omit such information altogether. In a special prison report by Mr. C. H. Wines, special agent, he states that "they have no criminal statistics to be placed by the side of those of other countries." In Canada a similar state of affairs obtains, though a census of confinees under and over 16 is to be found in a special report on the prisons of that country.

While any attempt to make a reliable comparison was thus completely baffled, some general results could be roughly estimated, but could not possibly be used statistically. So far as they went, they showed that even as far as a comparison with Great Britain was concerned the statement of the lecturer was incorrect, an inference afterwards confirmed on referring to two of our most reliable authorities—Messrs. H. H. Hayter, C.M.G., Government Statist, and A. J. Agg, Esq., now Commissioner of Railways.

One great benefit which young communities anxious to gauge their progress may derive from statistics, lies in the standard of comparison they are enabled to set up on various matters affecting their welfare. In the discussion of public questions, it is often of great moment that authentic

facts and figures should be published before interest in the subject of inquiry has evaporated. The importance of being able to procure readily and easily any essential information, by leading-article writers, professors, lecturers, (public or university,) and by persons engaged in the education of the masses, can hardly be over-estimated. If the foregoing allegation had been sustained, complete and correct information on the subject would have been invaluable to us as a community. It would immediately have led to a search for any exceptional circumstances which might produce such a result. The systems of education, state or private; of religious instruction, and the manner of imparting it; the method of dealing with "gutter children;" the laws applying to, and the methods of dealing with, juvenile offenders; the class of prisons they were committed to; the variety of punishments inflicted; whether whipping was resorted to, and under what restrictions; and the arrangements adopted in industrial or reformatory schools; are all questions which might have been investigated to secure the experience of other countries in which the evil could be proved to be less rampant. Practical knowledge of this description would be most useful in guiding future movement. It would supply a firm basis for legislation, and prevent merely experimental and, possibly, inefficacious action.

The disappointment arising from the result of this investigation naturally led to a consideration of the possibility of suggesting some means by which a certain amount of similarity might be secured—not entire uniformity just yet, but enough to make comparisons possible, and render them trustworthy when they were made.

Comparisons on a large scale do not require to be made continually. They are most useful when they cover a sufficiently long period to manifest the action of any new development of the laws, social conditions, resources, or discoveries in the countries they refer to; and yet not so long as to allow such progress to have been made, that the position of any one state at each period of computation should be perhaps more dissimilar than that of the various countries to be contrasted with each other.

A vast amount of the statistics annually issued have only a departmental interest, and are subdivided only to suit departmental convenience. Another large portion represent the various branches of one subject. Only the aggregate returns into which these should be condensed are required

for international purposes. Another division are principally compiled for local information and use. Many annual returns (those on population, births, and deaths, for example) are estimated, and are therefore only approximately correct.

As this paper is confined to those which are requisite for international comparison only, all of those enumerated above, except the aggregate returns, may be excluded at once from consideration. Therefore, returns which supply, as far as possible, verified figures, ranged under a comprehensive nomenclature, and which are published at moderately long intervals, are most suitable to commence with, for purposes of unification. The decennial census, which is taken in all English-speaking communities, fulfils these conditions, and the suggestions contained in this paper will be confined to it. By thus restricting the consideration of the subject, and excluding all returns of a local or partial character, it is trusted that an apparently hopeless question may be brought within the range of practical effort. Any suggestions contained herein must of necessity be general in application, and point out as much the direction in which action appears to be possible, as the action itself. The first point is practicability; the second is, whether they are likely to lead up to a further development or improvement in the direction of uniformity.

As this census is now taken simultaneously throughout the British dominions, the first advance towards the desired end has been made. The last census of the United States was taken in 1880; ours was taken in 1881. If the Government of the former country could be induced to postpone the next for one year—to 1891—uniformity of date throughout the English-speaking communities of the world would be secured. If not, it is a matter worth careful consideration whether it would not be advisable to alter our date to 1890, in view of the gain likely to accrue ultimately; or, better still, for either or both Governments to accept the year which is at present adopted by the majority of nations collecting census returns. A mutual arrangement amongst two countries whose influence on the rest of the world is so powerful and so widespread would at once attract the attention of other communities. If such an announcement was made, it is probable that neighbouring nations would sooner or later adopt the same year; and it is possible that this effect might ensue before the next succeeding enumeration.

Every such accession would not only induce others to enter the combination, but also render it more difficult for them to persist in a policy which might rapidly become one of isolation. This opens a prospect of establishing unanimity amongst nations, in a comparatively short period—statistically speaking—in the foremost direction in which it has to be secured.

The next point for consideration is the form in which international statistics should be issued. Each country has its own method of compilation. In fact, in every branch of this "method" or "science" the systems of each country have (like *Topsy*) "growed," and bear little resemblance to each other. Some issue ponderous publications, apparently bound together at haphazard, where each return has no connection with the one on either side of it, but an intimate association with several others scattered promiscuously throughout the whole work. Others issue "parts" containing prepared tables, with a special report in a separate volume. In a third case blue books, arranged in sections, in which the tables and explanatory letterpress accompany each other as closely as possible, are published. These systems are all too cumbersome for our purpose. The first system may be excluded from consideration at once. No one who has ever had to examine "Lords' Papers" would ever wish to see it perpetuated in any other publication. It would simply render utterly confusing those returns which are at present simple and orderly in arrangement. In the last two considerable difficulties have to be overcome. In the first of them summary tables would have to be prepared, in which the various headings at the top and the divisions enumerated down the left-hand column would be subject to mutual agreement by the various countries entering into combination. A fatal difficulty in the way of adopting this method lies in the fact that the nomenclature to be mutually assented to would be doubled, with a corresponding decrease in any probability of agreement. To the last, or blue book, plan there are several objections. It would have to contain a small table for each subdivision, accompanied by explanatory notes. It would necessitate a very considerable alteration in almost every system of compilation at present in force. Every statist would strenuously object to the havoc it would cause amongst his pet creations. As no two countries have even similar main divisions, confusion would result, and the difficulties of comparison hardly be overcome. It would be inconvenient for the general inquirer.

In collecting his facts he would have a number of books open before him, all at different pages. Reference backwards and forwards would tend to disconcert and irritate him, would make his labour more severe, and in many cases cause his task to be abandoned in disgust. The difficulties which it is sought to remove from the path of the investigator would still exist, though perhaps in a less degree than at present.

The only way to secure uniformity would therefore appear to lie in the organisation of a scheme which will require as little agreement in nomenclature as possible, but which will practically secure uniformity by *including all statistics of international interest* which each country collects, and *no others*. The only form which can be arranged to meet these requirements is a tabulated form of summary sheet, in which each statistical authority can supply the information required from him from the statistics under his control. If each state would fill up such a form, (which, if necessary, might be printed in blank and supplied to them), and these were collected together, international statistics uniform in character would be secured. The principles on which such sheets should be compiled are as follow :—

1. That the arrangement shall be as clear as possible.

2. That they shall provide for uniformity on all necessary points, but that these points shall be restricted as much as possible, and shall leave the greatest freedom of contribution to each country.

3. That they shall not interfere in the slightest degree with the present method of compilation adopted by any statistical department.

4. That they shall include all leading information collected by any country consenting to adopt them, and therefore (*a*) that they shall provide for each country supplying statistics peculiar to itself alone, and (*b*) omitting information supplied by others, but which *it* does not possess.

5. That where, from unavoidable causes, uniformity is apparently impossible, a standard common to all shall be provided.

6. That they shall be capable of distribution in a form, which shall render them easy of access, intelligible at a glance, and instantaneously available for purposes of comparison.

First Clause.—To be thoroughly effective any such system being simply a compendium of statistical matter, collected and condensed from an immense chaos of bewildering figures,

should be tabulated on as simple and straightforward a plan as possible. They should be as easy for the student to read and consult as an ordinary catalogue. They should be kept entirely separate from all other matters, and contain nothing but the mere figures on the subjects they represent. Letterpress should be rigidly excluded, otherwise authorities suffering from *cacoëthes scribendi* would rapidly multiply bewildering explanations, containing more matter than the returns themselves. If further details or explanations on any subject are required, the different official returns from which the figures appearing in these tables are extracted, can be referred to. Clearness is the first requisite in all tables of figures. These especially require it, as they are for general reference by persons who have not made figures the special study of their lives, and who do not revel in them with the ardent enthusiasm of one riding his favourite hobby. Indeed, most of those who will consult them will do so from a strong sense of duty alone. If they are to be quoted correctly, and proper deductions are to be drawn from them, (without which they will be worse than valueless), that duty must be made as easy as possible. One or two of the simpler reforms which add to their clearness may be noticed. In some returns the letters B and G, M and W, are used to denote boys and girls, men and women, respectively. The headings Male and Female, comprise each of these appellations respectively, and may always be used to express the different sexes. Again, the total column is sometimes placed on the *left hand* side, and the word "aggregate," "persons," or some similar term used. The commoner practice of placing it after the subdivisions it comprises, or at the *right hand*, should be uniformly adopted, and the word "Total" should be the only one used to express this meaning. In fact, a point carefully considered has been, as in the "Specimen Return" attached, to ascertain the most inclusive head-line, and adopt it invariably, to the exclusion of all less general or synonymous terms.

Clause 2.—To secure the advantages of the second and fourth principles, the headings at *the top of the columns* of the summary are the only ones which should be submitted for general agreement. Each heading should comprise every subdivision of its subject, and no information should appear a second time in any other place. Uniformity in this circumscribed nomenclature might be easily secured if a little

pliability on the part of individuals, enforced by an expressed desire to co-operate on the part of Governments or Legislatures, should be exhibited. An effort to bring about such an agreement might eventuate in the formation of a statistical union, somewhat similar to the Postal Union, which has been so successfully established. To comprise in these summaries only those tables which are really necessary, and to have them as comprehensive as utility will permit, opens a wide door for all nations to enter through, and will remove many stumbling-blocks from the path of those who may make the attempt. In the specimen table the column at the left hand side is purposely left open. Each country can use it according to its own method of classification. The lines may contain the names of territorial or political divisions, towns, institutions, denominations or dates, as the methods of supplying the information required. They will not affect the value of the statistics. The totals at foot are what are wanted, and the detailed manner of procuring them will not matter in the least.

Clause 3.—In order to secure the co-operation which is necessary to success, it is of the greatest importance that these tables should not alter in any way the present statistical system of any country. To interfere with any such scheme, even in a slight degree, would immediately raise a storm of opposition which would at once sweep any proposed reform out of existence. They have been framed so as to coincide with and utilise existing arrangements in every way. As all care is taken to avoid unnecessary minuteness, countries whose statistics are limited in character would find little difficulty in complying with their principal requirements. Indeed, in such cases, the inclination latent in all statisticians to multiply information would be fostered and encouraged.

Clause 4, *sub-clause "B."*—If a statistical department or bureau omits to collect the information which any column is intended to contain (as the United States, for instance, appears to do under the headings "Religions of the People" and in all criminal statistics), the space has only to be left blank. When it finds that surrounding Governments are impressed with the necessity of securing authenticated intelligence upon subjects which it has hitherto neglected, it is possible, and even probable, that before long arrangements will be made to occupy the vacant ground, and so render the circle of information complete.

Sub-clause "*A*."—To meet cases where one country possesses information too important to its own interests to be omitted, but which others cannot supply (for example, in natural products), blank columns have been provided under the spaces marked "Other ————," for them to fill up as they please, and so meet their requirements.

Where voluminous returns, infinite in particulars, are prepared, they are sure to contain the intelligence wanted for international purposes. It has only to be extracted from its accompanying cloud of figures, and to be reprinted in the form agreed upon. Neither the copiousness of the information nor the form in which it was originally issued need be altered in the slightest degree. There are few departments which could refuse to fill up a table which would contain only some of the information at their command.

We may indeed hope that by a similar process of reasoning to that in the previous case a corresponding result will be arrived at, but in the opposite direction; that tables not actually necessary would be by degrees discontinued, and that a reform which would have the effect of curtailing the too great multiplicity of statistical information, which is felt to be a growing evil, would be silently inaugurated.

Clause 5.—In many cases, and particularly in the natural productions of different countries, the variety of the information supplied makes any comparison almost impossible. The only apparent way to provide a common standard is to adopt the commonest standard of all — the standard of value. Therefore, where it is necessary, a column is provided at the end of the section in which the value of the articles enumerated may be given.* The difficulty caused by different monetary systems may be avoided by providing a second column of value. The first should contain the value in local currency; in the second the same value should be expressed in the coinage of the country to whom the returns are to be supplied. For instance, in American returns supplied to England, the first valuation would be in dollars, and the second in pounds sterling. In English returns sent to America the first column would be headed "libra" (£), and the second "dollars." The last column might be filled up by each individual country after receiving the returns, otherwise a great deal of labour would be entailed on the

* On a further examination I find the system of providing *one* column for the monetary value is in force in the summaries attached to Hayter's *Victorian Year Book*.

supplying countries in calculating values under a variety of standards. Of course, the same trouble would be entailed on receiving countries, with this difference, that they would have to turn foreign values into their own equivalents, and that if they did not want the comparison they need not make it. Great trouble in printing would also be occasioned to the supplying countries if the type set up for this column had to be constantly altered as impressions of the sheet were being struck off.

Clause 6.—Returns containing ages display the greatest lack of uniformity. They are introduced into almost all statistics, and on every subject, (even in the same country), their enumeration is different. For instance, in the Industrial and Reformatory Schools' Returns of Great Britain, there are at least *four* schemes in force for subdividing the ten years of life between the ages of 6 and 16! A close examination of the tables issued by various countries, shows that it is most usual to subdivide this information into quinquennial periods up to the age of 30, and into decennial ones afterwards. These are therefore adopted. But as local authorities, where a different classification is made use of, do not want to be hampered with this information, and as international explorers do not require any other, it is advisable that where such columns are introduced they should be distinctly separated from the rest, and arranged so that they could be recognised and picked out at a glance. They could be enclosed between *red* lines, which would signify that the columns so distinguished contained *international* amongst merely local information. Wherever most of the collected statistics fit in with the proposed summaries, but occasional matter of only local interest has to be introduced, the column containing it may be distinguished by *blue* lines, which will therefore signify that they enclose *local* figures amongst others that were of international interest. Under these suggestions, the compilation of International Statistics might proceed simultaneously with, or even as part of, the usual statistics of a country. Local arrangements might also be easily made to have them published, (with a view to easy extraction afterwards), as an additional appendix or addendum to the ordinary statistics of the nation.

The extension of these ideas to other local returns, and the formulation of other statistical signals, would be easily accomplished as the occasion arose for them. Valuable ideas

would be contributed from all parts of the world as uniformity became gradually effected, and as a wish to fall in with the statistical union was manifested.

Having agreed upon the form of summaries to be issued uniformly, we have next to consider the easiest methods of securing their completion and publication. Blank sheets to any required number could be supplied to each country by one entrusted with their production; or, better still, a printer's proof could be sent, and they could print off their own supply. In addition to those necessary for their own census publications, an extra number should be struck off for binding with those of other countries in a volume to contain these only and a grand total sheet for each section. In the latter the left-hand column should contain the names of the nations contributing, and the others the totals only of the various summaries. In this form a condensed issue of uniform statistics never before attempted would be given to the world. They could be issued in volumes, which could be sold to all countries and buyers, at a price just sufficient to cover the cost of production. These books would contain at first the uniform statistics of the English-speaking communities, but eventually, we may hope, those of nearly the whole world. Once let such a publication appear, and there can be little doubt that, with each census compilation, other countries would not only contribute, but also endeavour to arange their methods of collection so as to make their contributions as complete as possible.

If it is objected that it would be impossible to secure this uniformity from British official departments, I would point to the collected and condensed statistics of Great Britain published in Thom's *Official Directory*. The same amount of labour that is expended on that publication would secure this object. If the proposed forms were once adopted that directory would naturally follow in the same direction. Arrangements might be made for the publishers of that work to collect these summaries, and supply them to those appointed to edit the statistical volume just referred to. Or they might be collected by the latter, and utilised by the former, the expense in either case being equally divided. That work, however, shows the possibility of succeeding, and in this, for reform to be possible should mean that it should be accomplished. The want of a central and permanent controlling department of statistics in Great Britain, has been forcibly pointed out in the report of the Special

Committee of the House of Lords appointed to consider the subject, and is painfully felt in this connection. As the leading country, and the one which, with her dependencies, could contribute the largest number of returns, a request from such a department would doubtless be complied with, and the issue of the summarised statistics of the world be confided to it. In formulating these suggestions I have aimed at securing simplicity above all things. In dealing with a subject of such vast dimensions as "Statistical Uniformity," the greatest danger of failure lies in attempting too much. Far better to lay a firm foundation, on which a superstructure more or less intricate may be gradually built up. The present statistical system (or want of it), is the growth of many years, and yet a late president of the Statistical Society (Mr. R. Giffen) has stated that there is still a deficiency of statistics in some directions. The basis on which this paper is laid is, that the first steps to effect its end must be as straightforward and as plain as it is possible to make them, without, at the same time, losing sight of comprehensiveness as a cardinal point; and, further, that it will take time, and *probably a long time*, to secure uniformity. I have kept fully in view that any sudden and drastic reform is quite impossible. Gradual improvement is all that can be looked for. If there is a reasonable expectation of securing uniformity under these suggestions in the same period that has been occupied in producing the present chaotic state, they would be worth further consideration and practical effort. "*Slow improvement*," says Mr. Giffen, "*is no bar to a new system.*"

Amongst the advantages which these suggestions aim at securing in practice the following may be claimed:—They do not stop any information at present collected; they simply ask in some cases for a little more, that little being already supplied by other countries, and so fall in with, and even encourage, the natural bent of nearly all statisticians to multiply information and create statistics. In most cases the required figures (scattered, however, throughout a great variety of returns) are already supplied, and the aim is to collect them under one focus. They tread on no official corns; they offend no prejudices and upset no theories, perhaps almost as dear as life itself. On the contrary, they have been carefully devised with the intention of either falling in with or evading each of these possible difficulties. They purpose comprising everything and rejecting nothing

of sufficient interest. They introduce a system of statistical signals, capable of indefinite amplification, and which may be as easily recognised by competent inquirers as the flag signals from one ship to another in mid-ocean. Instead of attempting to unify the detailed statistics of different nations, where, from unalterable causes—such as independent legislation; climate; seaboard; or the want of it; national characteristics; and natural capacities, features, and productions;—uniformity in the conditions of life is impossible, and therefore where uniformity in the information which is the collected result and the outcome of those conditions is impossible also, I have endeavoured to provide a common ground, where all may display the best they have to bring. It is like transplanting a half-grown tree, which we trust to see, as it establishes itself in new soil, spread its roots both downwards and outwards, till its wide-spreading branches eventually encircle and embrace all matter which ought to be sheltered beneath them; or, to put it in another form, I have endeavoured to lay down broad parallel lines, into which all smaller ones will gradually converge, between which they may run, and into which they will finally be absorbed.

Once adopted they should prevent, in the future, any compilation of new statistics on an independent basis. By persistently keeping their requirements under parliamentary or ministerial notice, the detail of future legislation and legislative information might be so arranged as to harmonise with their demands.

They would bring a study at present confined to a few within the range of many investigators, would enable them to make exact and accurate comparisons before suggesting reforms, and add much to our knowledge of many subjects not thoroughly understood at present. By removing Carlyle's reproach against statistics as being "dry as dust-bins without an index," they would assist not only to simplify and popularise their study, but also to attain one of the principal reforms which statists are so anxious to inaugurate and complete.

The "Specimen Return" will be found over leaf.

Specimen Summary Sheet.—AGRICULTURE AND NATURAL PRODUCTIONS.

	AGRICULTURE.																							
	Occupiers								How Occupied							Estimated value of Farm Implements, &c.	Live Stock							Estimated value
						Employées.			Stations or Runs		Farms		Gardens and Orchards					Cattle						
	M	F	T	Owners	Tenants	Under 20	Over 20	Total.	No.	Ac.	No.	Ac.	No.	Ac.	Estimated Total value		Horses and Mules	Milch Cows	Oxen	Other Cattle	Sheep	Swine	Poultry	
TOTALS ..																								

	AGRICULTURE																													VALUE	
	Farm Produce													Estimated value	Dairy Produce				Estimated value	Animal Products			Total estimated value	Other Products					Estimated value	Total Value of all Productions	
	Hay	Barley	Wheat	Oats	Rye	Potatoes	Ind. Corn	Tobacco	Hops	Rice	Sugar	Cotton	Vegetables		Milk	Butter	Cheese	Fruits		Wool	Honey	Furs		Timber						Local Currency	Foreign Coinage
	tons	bushels						lbs.							qts.	lbs.				lbs.		value.									
TOTALS ..																															